REMARKS

Oath/Declaration:

Applicant sincerely thanks the Examiner for withdrawing the Objection to the originally filed Inventor Declaration, and for indicating that the Supplemental Oath complies with all of the necessary requirements.

Drawings:

The Examiner has maintained the objection to the drawings set forth in the previous Office Action, by stating that the drawings should show the "mechanism for adjusting" in claims 4 and 15, and the "mechanism for adjusting/aligning" in claims 5 and 16. Specifically, the Examiner has indicated that the mere addition of a "box" to the drawings to show this claimed feature would be sufficient.

It appears that the Examiner is requiring addition of the actual mechanism used to adjust/move the condenser lens **2** along both the optical axis **7**, and its angle. However, with regard to the actual claim language, Applicant submits that the claim term "mechanism" in all of the above claims refers to the lens **2** itself, and not a mechanism to move the lens 2. Applicant notes that the lens 2 is the "adjusting mechanism" as used in the claims, and that this feature of the present invention is adequately shown in the drawings, and discussed in the written description.

Applicant further notes, that although the lens 2 is used as an exemplary embodiment of the "adjusting mechanism" in the present application, the present invention is not, in any way, limited to the lens 2 as the "adjusting mechanism." The reference to the lens 2 within the specification is merely intended to be exemplary.

Further, in an effort to clarify the claimed invention, Applicant has adopted the Examiner's suggestion and has amended the specification and Figure 1, as shown in the attached Appendix and attached Proposed Correction to Figure 1. Applicant has made these amendments to show simple mechanisms to move/adjust the lens 2.

Applicant submits that mechanisms for this purpose (moving the lens) are well known in the art. Further, Applicant submits that the addition of the reference to these components is in no way an admission that the present application was deficient in any way, or that the "adjusting mechanism" of the claims was not adequately shown. Additionally, Applicant notes that the above referenced amendments have been made to merely clarify the claimed invention and are not intended to narrow the original scope or spirit of the claims or application, in any way.

In view of the foregoing discussion, the attached proposed correction to Figure 1 and the attached changes to the written description, Applicant hereby requests the Examiner reconsider and withdraw the above objection to the drawings.

Allowable Subject Matter:

Applicant again thanks the Examiner for indicating that although claims 3-5 and 14-17 have been objected to, these claims would be allowable if claims 3 and 14 were written in independent form, and that claims 32 and 33 would be allowable if written to overcome their rejection under 35 U.S.C. § 112, 2nd paragraph, discussed below.

Claim Rejections:

Claims 1-39 are all of the claims that are pending in the present application. Claims 18-31, 34-35 and 38-39 have been withdraw from consideration, and claims 1-17, 32, 33 and 36-37 stand rejected.

35 U.S.C. § 112, 1st Paragraph Rejection - Claims 36 and 37:

Claims 36 and 37 remain rejected under 35 U.S.C. § 112, 1st paragraph for the same reasons set forth in the August 22, 2002 Office Action. Specifically, the Examiner previously asserted that both claims 36 and 37 lack "enablement" because the written description of the above application does not "reasonably provide enablement for a method of observing an image of a sample by using a microscope having an illumination system, a spatial filter disposed in or near the diffracting image plane and an observation system having an objective lens wherein the method comprises only one step of moving the position of the converging point of [the] illuminating light." *See* August 22, 2002 Office Action, page 5, para. 12.

Applicant has amended claims 36 and 37 as shown in the attached Appendix, and submits that these amendments adequately address the Examiner's concerns with regard to these claims. Thus, Applicant hereby requests the Examiner reconsider and withdraw the above 35 U.S.C. § 112, 1st paragraph rejection of these claims.

35 U.S.C. § 112, 2nd Paragraph Rejection - Claims 1-17, 32-33, and 36-37:

Claims 1-17, 32-33, and 36-37 also remain rejected under 35 U.S.C. § 112, 2nd paragraph as being indefinite. The Examiner is essentially saying that these claims are unclear because they state that there is an "illuminating means for emitting an illumination light as a convergent beam which converges at a point in space". Although Applicant does not agree that the above language makes the claims "unclear", Applicant has taken the path of least resistance and has amended these claims as shown in the attached Appendix. Applicant submits that these amendments adequately address the Examiner's concerns with regard to these claims and

hereby requests the Examiner reconsider and withdraw the above 35 U.S.C. § 112, 2nd paragraph rejection of these claims.

Further, Applicant notes that the above referenced claim amendments have been made to merely clarify the claimed invention and are not intended to narrow the original scope or spirit of the claims in any way.

Additionally, Applicant notes that because there are no rejections of claims 36 and 37 based on prior art references, these claims are now in allowable condition.

35 U.S.C. § 102(b) Rejection - Claims 1 and 6:

Claims 1 and 6 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,305,139 to Greenberg. In view of the following discussion, Applicant respectfully disagrees.

Applicant respectfully submits that Greenberg fails to disclose an illuminating means with a single light source, where the light from the light source converges at a point in space as set forth in claim 1. As shown in Figure 2, of Greenberg, two or more light sources are used. With this configuration (two or more light sources) a Fourier-transformed image of the sample would not be formed on a plane including the converging point of the illumination light.

Additionally, Applicant states that the illumination light in Greenberg does not converge at a point in a space between the support stage and the objective lens. In Figure 2, of the Greenberg reference, beam paths 33 and 34 indicate typical beam paths of light emitted from the respective lamps (26 and 29). The cross point of the beam paths 33 and 34 does not show or indicate that the illumination light converges at one point in space. Additionally, Applicant submits that the Greenberg reference does not disclose an objective lens disposed such that the

illumination light is incident thereon after light transmitted through or reflected by the sample is converged at a converging point. There is no express disclosure that the illumination light converges at a single point in space.

Therefore, in view of the foregoing, Applicant submits that Greenberg fails to disclose each and every feature of the present invention, as set forth in claims 1 and 6. Thus, Applicant hereby requests the Examiner reconsider and withdraw the above 35 U.S.C. § 102(b) rejection of the above claims.

35 U.S.C. § 103(a) Rejection - Claim 2:

Claim 2 remains rejected under 35 U.S.C. § 103(a) as being unpatentable over Greenberg in view of the previously applied Shimada reference. In view of the following discussion, Applicant respectfully disagrees.

As an initial matter, Applicant notes that since claim 2 depends on claim 1, and because Shimada fails to cure the deficiencies in Greenberg, Applicant submits that claim 2 is also allowable, at least by reason of its dependence.

Additionally, Applicant notes that Shimada does not disclose illuminating means for emitting an illumination light which converges at a point in space. In Shimada, at col. 20, lines 59-62, Shimada teaches that the image of the light source 103 is projected on the surface of the aperture diaphragm 110 in the entrance pupil position of the condenser lens 111. This means that the light emitted from one point on the image of the light source 103 formed at the position of the aperture diaphragm 110 is converted to a parallel beam through the condenser lens 111, and the specimen 102 is illuminated by the parallel beam. In other words, illumination method of the Shimada is an ordinary Koehler illumination method.

Moreover, Figures 13A-13B, 15A-15C, 21, 22 and 24-28, of Shimada, indicate how the image of the field stop 106 is formed near the surface of the specimen 102. Stated differently, the Figures do not indicate or show converging light which illuminates the specimen 102.

In view of the foregoing, Applicant submits that one of ordinary skill in the art would not have been motivated to combine the teachings of Shimada with those of Greenberg, and even if one were to do so, the resultant combination would not disclose each and every feature of the claimed invention.

Therefore, Applicant respectfully submits that the Examiner has failed to establish a *prima facie* case of obviousness with respect to claim 2, and hereby requests the Examiner reconsider and withdraw the above 35 U.S.C. § 103(a) rejection of this claim.

35 U.S.C. § 103(a) Rejection - Claims 7-12:

Claims 7-12 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Greenberg in view of the previously applied Ellis reference. In view of the following discussion, Applicant respectfully disagrees.

As an initial matter, Applicant notes that since claims 7-12 depend on claim 1, and because Ellis fails to cure the deficiencies in Greenberg, Applicant submits that these claims are also allowable, at least by reason of their dependence.

Additionally, Applicant notes that according to claim 1 , of Ellis, a beam of radiation is diverging at the front focal plane of a condenser lens. This means that the light emitted at a point on the front focal plane (i.e. the front iris) of a condenser lens is converted to the parallel beam. Further, as shown in Figure 2, of Ellis, the beam diverges from a point on the condenser iris 15.

The beam is then converted to a parallel beam through condenser lens 17 and illuminates an object on the stage 20.

Accordingly, as with Shimada, the illumination method of the Ellis is a Koehler illumination method. In other words, there is no disclosure related to the illumination means of claim 1.

In view of the foregoing, Applicant submits that one of ordinary skill in the art would not have been motivated to combine the teachings of Ellis with those of Greenberg, and even if one were to do so, the resultant combination would not disclose each and every feature of the claimed invention.

Therefore, Applicant respectfully submits that the Examiner has failed to establish a *prima facie* case of obviousness with respect to claims 7-12, and hereby requests the Examiner reconsider and withdraw the above 35 U.S.C. § 103(a) rejection of these claims.

35 U.S.C. § 103(a) Rejection - Claim 13:

Claim 13 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Greenberg in view of Ellis in further view of Shimada. However, as claim 13 depends on claims 1 and 7, Applicant submits that this claim is also allowable for at least the same reasons set forth above. Therefore, Applicant hereby requests the Examiner reconsider and withdraw the above 35 U.S.C. § 103(a) rejection of this claim.

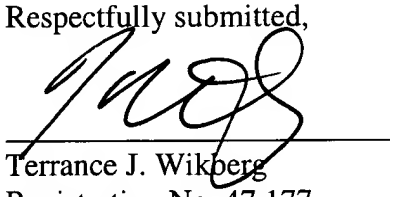
Conclusion:

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the

Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION:

The specification is changed as follows:

On page 36, please correct the 2nd full paragraph, with the following corrections:

The condenser lens 2 is movable in the direction of optical axis 7 against the position of the stage 5. By the condenser lens 2 moved in the direction of the optical axis 7, the distance between the sample 6 mounted on the stage 5 and the converging point 4, i.e., the distance between the sample 6 and the diffraction image plane 8, can be changed. In one embodiment, a mechanism 20 can be coupled to the condenser lens 2 to aid in moving the lens 2 in the direction of the optical axis 7 so as to adjust the distance between the sample 6 and the diffraction image plane 8.

On page 44, please correct the first full paragraph, with the following corrections:

Though the optical axis of condenser lens 2 and the optical axis of the objective lens 10 are held in parallel in this embodiment, they may be configured such that the angle of optical axis of condenser lens 2 with respect to the optical axis of objective lens 10 is made variable. When the angle of optical axis of condenser lens 2 is changed, the diffracted light participating in observation can be altered, whereby the image information for seeing the texture and orientation can be enhanced. In one embodiment, a mechanism 21 can be coupled to the condenser lens 2 to aid in adjusting or aligning the direction of the diffracted light participating in the observation.

IN THE CLAIMS:

The claims are amended as follows:

1. (Twice Amended) An optical microscope apparatus, comprising:

illuminating means having a single light source for emitting an illumination light ~~as a convergent beam~~ which converges at a point in a space;

a sample mounting table for mounting a sample in front of said converging point of said illumination light; and

an objective lens positioned after said converging point such that said illumination light is incident thereon,

wherein said illumination light is transmitted through or reflected by said sample and wherein said illumination light converges at said converging point.

32. (Twice Amended) A microscope observing method using an optical microscope apparatus comprising illuminating means for emitting an illumination light ~~as a convergent beam~~ which converges at a point in a space; a sample mounting table for mounting a sample in front of said converging point of said illumination light; an objective lens positioned after said converging point such that said illumination light is incident thereon, wherein said illumination light is transmitted through or reflected by said sample and wherein said illumination light converges at said converging point; and a spatial filter, disposed at a position of a diffraction image plane, for selectively blocking a part of said illumination light transmitted through or reflected by said sample, said diffraction image plane being orthogonal to an optical axis of said

illumination light and including said converging point; said objective lens being adapted to be focused on each of said diffraction image plane and said sample;

said method comprising the steps of focusing said objective lens onto said diffraction image plane so as to observe a diffraction image of said sample formed on said diffraction image plane by said illumination light and adjusting said spatial filter such that only light from a desirable region of said diffraction image is transmitted therethrough; and then focusing said objective lens onto said sample so as to observe said sample with said light transmitted through said spatial filter.

33. (Twice Amended) A microscope observing method using an optical microscope apparatus comprising illuminating means for emitting an illumination light ~~as a convergent beam~~ which converges at a point in a space; a sample mounting table for mounting a sample in front of said converging point of said illumination light; an objective lens positioned after said converging point such that said illumination light is incident thereon, wherein said illumination light is transmitted through or reflected by said sample and wherein said illumination light converges at said converging point; a polarizer disposed between said illuminating means and sample mounting table; an analyzer disposed between said sample mounting table and eyepiece; and a spatial filter, disposed at a position of a diffraction image plane, for selectively blocking a part of said illumination light transmitted through or reflected by said sample, said diffraction image plane being orthogonal to an optical axis of said illumination light and including said converging point; said objective lens being adapted to be focused on each of said diffraction image plane and said sample;

said method comprising the steps of focusing said objective lens onto said diffraction image plane so as to observe a diffraction image of said sample formed on said diffraction image plane by said illumination light and adjusting said spatial filter such that only light from a desirable region of said diffraction image is transmitted therethrough; and then focusing said objective lens onto said sample so as to observe said sample with said light transmitted through said spatial filter.

36. (Twice Amended) A microscope observing method using an optical microscope apparatus comprising illuminating means for emitting an illumination light ~~as a convergent beam~~ which converges at a point in a space; a sample mounting table for mounting a sample in front of said converging point of said illumination light; an objective lens positioned after said converging point such that said illumination light is incident thereon, wherein said illumination light is transmitted through or reflected by said sample and wherein said illumination light converges at said converging point; and a spatial filter, disposed at a position of a diffraction image plane, for selectively blocking a part of said illumination light transmitted through or reflected by said sample, said diffraction image plane being orthogonal to an optical axis of said illumination light and including said converging point;

said objective lens being adapted to be focused on each of said diffraction image plane and said sample; said method comprising the steps of:

emitting an illumination light which converges at a point in a space,

mounting a sample in front of said converging point of said illumination light such that said illumination light is transmitted through or reflected by said sample,

converging said illumination light at said converging point,

selectively blocking a part of said illumination light transmitted through or reflected by said sample, and

changing the position ~~10~~ of the converging point of the illumination light in the direction of the optical axis of said objective lens to adjust the size of the diffraction image.

37. (Twice Amended) A microscope observing method using an optical microscope apparatus comprising illuminating means for emitting an illumination light ~~as a convergent beam~~ which converges at a point in a space; a sample mounting table for mounting a sample in front of said converging point of said illumination light; an objective lens positioned after said converging point such that said illumination light is incident thereon, wherein said illumination light is transmitted through or reflected by said sample and wherein said illumination light converges at said converging point; a polarizer disposed between said illuminating means and sample mounting table; an analyzer disposed between said sample mounting table and eyepiece; and a spatial filter, disposed at a position of a diffraction image plane, for selectively blocking a part of said illumination light transmitted through or reflected by said sample, said diffraction image plane being orthogonal to an optical axis of said illumination light and including said converging point; said objective lens being adapted to be focused on each of said diffraction image plane and said sample; said method comprising the steps of:

emitting and polarizing an illumination light which converges at a point in a space,

mounting a sample in front of said converging point of said illumination light such that said illumination light is transmitted through or reflected by said sample,

converging said illumination light at said converging point,

selectively blocking a part of said illumination light transmitted through or reflected by said sample, and

changing the position of the converging point of the illumination light in the direction of optical axis of said objective lens to adjust the size of the diffraction image.